

Appl. No. 10/064,983
Amdt dated November 7, 2003
Reply to Office Action of Sep 10, 2003

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims

1. (previously presented) A method for forming an OLED device comprising:
forming a device layer on a substrate having an active region defined thereon in which pixels are formed;
 patterning the device layer to form pillars along a first direction on the substrate, wherein the pillars comprise a tapered profile, and grooves between the pillars, the pillars extend outside the active region to prevent electrical shorting;
 coating the substrate with a solution comprising an organic functional material dissolved in a solvent, the pillars are inert to the solvent;
 removing the solvent to form an organic functional layer; and
 depositing a conductive layer in the electrode region on the substrate, wherein the tapered profile of the pillars separate the conductive layer into first and second distinct portions.

2. (original) The method of claim 1 wherein a distance D is provided between the edge of the active region and ends of the grooves.

3. (original) The method of claim 2 wherein D is at least 300 μ m.

4. (original) The method of claim 2 further comprises mounting a cap on the substrate to hermetically seal the OLED device.

5. (original) The method of claim 4 wherein the substrate comprises a flexible substrate.

6. (original) The method of claim 5 wherein the substrate comprises electrodes in a second direction on a surface thereof.

Appl. No. 10/064,983
Amdt dated November 7, 2003
Reply to Office Action of Sep 10, 2003

7. (original) The method of claim 6 wherein the functional organic material comprises a conjugated polymer dissolved in a solvent.

8. (original) The method of claim 1 wherein the device layer comprises a photosensitive device layer, the photosensitive layer is patterned by exposing and developing the photosensitive device layer.

9. (original) The method of claim 8 wherein the photosensitive layer comprises a positive photosensitive layer, wherein exposed portions of the photosensitive layer are removed during developing.

10. (original) The method of claim 9 wherein exposing comprises successively exposing the photosensitive layer with electrons or charged particles having different energies which have different penetration depths to form pillars with the tapered profile during developing.

11. (original) The method of claim 8 comprises curing the pillars to render the pillars inert against the solvent.

12. (previously presented) A method for forming an OLED device comprising:
forming a device layer on a substrate having an active region defined thereon in which pixels are formed;
patternning the device layer to form pillars along a first direction on the substrate, wherein the pillars comprise a tapered profile, and grooves between the pillars, the pillars extend outside the active region to edges of the substrate to prevent electrical shorting;
coating the substrate with a solution comprising an organic functional material dissolved in a solvent, the pillars are inert to the solvent;
removing the solvent to form an organic functional layer; and
depositing a conductive layer on the substrate, wherein the tapered profile of the pillars separate the conductive layer into first and second distinct portions.

Appl. No. 10/064,983
Amdt dated November 7, 2003
Reply to Office Action of Sep 10, 2003

13. (original) The method of claim 12 further comprises mounting a cap on the substrate to hermetically seal the OLED device.

14. (original) The method of claim 12 wherein the substrate comprises a flexible substrate.

15. (original) The method of claim 12 wherein the substrate comprises electrodes in a second direction on a surface thereof.

16. (original) The method of claim 15 wherein the functional organic material comprises a conjugated polymer dissolved in a solvent.

17. (original) The method of claim 16 wherein the device layer comprises a photosensitive device layer, the photosensitive layer is patterned by exposing and developing the photosensitive device layer.

18. (original) The method of claim 17 wherein the photosensitive layer comprises a positive photosensitive layer, wherein exposed portions of the photosensitive layer are removed during developing.

19. (original) The method of claim 17 wherein exposing comprises successively exposing the photosensitive layer with electrons or charged particles having different energies which have different penetration depths to form pillars with the tapered profile during developing.

20. (original) The method of claim 19 comprises curing the pillars to render the pillars inert against the solvent.

21. (previously presented) A method for forming an OLED device comprising:
forming a device layer on a substrate having an active region defined thereon in which pixels are formed;

Appl. No. 10/064,983
Amtd dated November 7, 2003
Reply to Office Action of Sep 10, 2003

patterning the device layer to form pillars along a first direction on the substrate, wherein the pillars comprise a tapered profile and grooves between the pillars, the pillars extend outside the active region to prevent electrical shorting;

forming an organic functional material on the substrate; and

depositing a conductive layer in the electrode region on the substrate, wherein the tapered profile of the pillars separate the conductive layer into first and second distinct portions.

22. (previously presented) The method of claim 21 wherein grooves extend outside the active region to the edges of the substrate.

23. (previously presented) The method of claim 22 wherein forming an organic functional material on the substrate comprises coating the substrate a solution comprising the organic functional material dissolved in a solvent and wherein the pillars are inert to the solvent.

24. (previously presented) The method of claim 22 wherein:
the device layer comprises a photosensitive material; and
the device layer after the pillars are formed is cured to render the pillars inert to the solvent.

25. (previously presented) The method of claim 21 wherein forming an organic functional material on the substrate comprises coating the substrate a solution comprising the organic functional material dissolved in a solvent and wherein the pillars are inert to the solvent.

26. (previously presented) The method of claim 25 wherein:
the device layer comprises a photosensitive material; and
the device layer after the pillars are formed is cured to render the pillars inert to the solvent.

27. (previously presented) The method of claim 21 wherein:

Appl. No. 10/064,983
Amdt dated November 7, 2003
Reply to Office Action of Sep 10, 2003

the device layer comprises a photosensitive material; and
the device layer after the pillars are formed is cured to render the pillars inert to the solvent.

28. (withdrawn)

29. (withdrawn)

30. (withdrawn)

31. (withdrawn)

32. (withdrawn)

33. (withdrawn)

34. (withdrawn)